

Gunter, Jason

From: Nations, Mark <mnations@doerun.com>
Sent: Wednesday, March 12, 2014 8:46 AM
To: Gunter, Jason
Cc: Yingling, Mark; Wohl, Matthew; robert.hinkson@dnr.mo.gov; brandon.wiles@dnr.mo.gov; Ty Morris (TMorris@barr.com); Cummings, Mark; Sanders, Amy B.
Subject: Leadwood Progress Report
Attachments: LW_02-14.doc; 2014-02-25 LW NPDES Pace Lab Report.pdf

Jason, attached is the February report.
Mark

OTCR



4.2

0402

**THE
DOE RUN
COMPANY**

Remediation Group

Mark Nations
Mining Properties Manager
mnations@doerun.com

March 11, 2014

Mr. Jason Gunter
Remedial Project Manager
U.S. Environmental Protection Agency
Region 7 - Superfund Branch
11201 Renner Blvd.
Lenexa, KS 66219

Re: The Doe Run Company - Leadwood Mine Tailings Site Monthly Progress Report

Dear Mr. Gunter:

As required by Article VI, Section 50 of the Unilateral Administrative Order (Docket No. CERCLA-07-2006-0272) for the referenced project and on behalf of The Doe Run Company, the progress report for the period February 1, 2014 through February 28, 2014 is enclosed. If you have any questions or comments, please call me at 573-518-0800.

Sincerely,



Mark Nations
Mining Properties Manager

Enclosures

c: Mark Yingling – TDRC (electronic only)
Matt Wohl – TDRC (electronic only)
Robert Hinkson – MDNR
Brandon Wiles – MDNR
Ty Morris – Barr Engineering

Leadwood Mine Tailings Site
Leadwood, Missouri
Removal Action - Monthly Progress Report
Period: February 1, 2014 – February 28, 2014

1. Actions Performed or Completed This Period:

- a. None.

2. Data and Results Received This Period:

- a. During this period, water samples were collected from downstream of Leadwood Dam and the East Seep and Erosion Area, as well as from upstream and downstream of the confluence of Eaton Creek with Big River. The analytical results for this event are included with this progress report.
- b. During this period, the Ambient Air Monitoring Reports for October 2013 and November 2013 were completed. Any issues identified in these reports are discussed below. A copy of these documents has been sent to your attention.

The October 2013 Ambient Air Monitoring Report noted the following:

- The action levels for lead and dust were not exceeded.
- No sample was taken on the Big River #4 TSP monitor on 10/04/13 due to the run time of the monitor being outside of the acceptable limits. This issue has been addressed.
- No sample was taken on the Leadwood #3 (School) TSP monitor on 10/04/13 due to unknown reasons. Follow-up inspections of the monitor indicated that the monitor is working properly.
- No sample was taken on the Big River #4 TSP monitor on 10/16/13 due to unknown reasons. Follow-up inspections of the monitor indicated that the monitor is working properly.
- No sample was taken on the Big River #4 TSP monitor on 10/29/13 due to an electrical failure. Upon discovery, this issue was addressed.
- No sample was taken on the Big River #4 TSP monitor on 10/30/13 due to a mechanical failure. Upon discovery, this issue was addressed.

The November 2013 Ambient Air Monitoring Report noted the following:

- The action levels for lead and dust were not exceeded.
- No sample was taken on the Leadwood #1 (Wortham Road) TSP monitor on 11/04/13 due to the run time of the monitor being outside of the acceptable limits.
- No sample was taken on the Leadwood #1 (Wortham Road) TSP monitor on 11/05/13 due to the run time of the monitor being outside of the acceptable limits. This issue has been addressed.
- No sample was taken on the Leadwood #1 (Wortham Road) TSP monitor on 11/12/13 due to the run time of the monitor being outside of the acceptable limits.
- No sample was taken on the Leadwood #1 (Wortham Road) TSP monitor on 11/15/13 due to the run time of the monitor being outside of the acceptable limits. This issue has been addressed.
- There was a QA blank filter for the Big River #4 QA TSP monitor on 11/19/13.
- No sample was taken on the Leadwood #2 (Office) TSP monitor on 11/22/13 due to an issue with the timer. Upon discovery, this issue was corrected.
- No samples were taken with the TSP monitors on 11/27/13, 11/28/13, or 11/29/13 due to the holiday.
- No samples were taken with the PM₁₀ monitors on 11/30/13 due to the holiday.

3. Scheduled Activities not Completed This Period:

- a. None.

4. Planned Activities for Next Period:

- a. Continue vegetation maintenance activities. The use of biosolids will only be continued if a biosolids management plan has been submitted to and approved by EPA.
- b. Complete monthly water sampling activities as described in the Removal Action Work Plan.
- c. Complete air monitoring activities as described in the Removal Action Work Plan.

5. Changes in Personnel:

- a. None.

6. Issues or Problems Arising This Period:

- a. None.

7. Resolution of Issues or Problems Arising This Period:

- a. None.



Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

March 10, 2014

Amy Sanders
The Doe Run Company
P. O. Box 500
Viburnum, MO 65566

RE: Project: NPDES MONTHLY (LEADWOOD)
Pace Project No.: 60163754

Dear Amy Sanders:

Enclosed are the analytical results for sample(s) received by the laboratory on February 27, 2014. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jamie Church
jamie.church@pacelabs.com
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: NPDES MONTHLY (LEADWOOD)

Pace Project No.: 60163754

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

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SAMPLE SUMMARY

Project: NPDES MONTHLY (LEADWOOD)
Pace Project No.: 60163754

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60163754001	LEADWOOD 001	Water	02/25/14 15:46	02/27/14 08:20
60163754002	LEADWOOD 002	Water	02/25/14 16:01	02/27/14 08:20
60163754003	LEADWOOD UPSTREAM	Water	02/25/14 13:17	02/27/14 08:20
60163754004	LEADWOOD DOWNSTREAM	Water	02/25/14 13:02	02/27/14 08:20

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SAMPLE ANALYTE COUNT

Project: NPDES MONTHLY (LEADWOOD)
Pace Project No.: 60163754

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60163754001	LEADWOOD 001	EPA 200.7	TJT	3	PASI-K
		SM 2540D	JMC1	1	PASI-K
		SM 2540F	JMC1	1	PASI-K
		EPA 300.0	OL	1	PASI-K
60163754002	LEADWOOD 002	EPA 200.7	TJT	3	PASI-K
		SM 2540D	JMC1	1	PASI-K
		SM 2540F	JMC1	1	PASI-K
		EPA 300.0	OL	1	PASI-K
60163754003	LEADWOOD UPSTREAM	EPA 200.7	TJT	6	PASI-K
		EPA 200.7	SMW	3	PASI-K
		SM 2540D	JMC1	1	PASI-K
60163754004	LEADWOOD DOWNSTREAM	EPA 200.7	TJT	6	PASI-K
		EPA 200.7	SMW	3	PASI-K
		SM 2540D	JMC1	1	PASI-K

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ANALYTICAL RESULTS

Project: NPDES MONTHLY (LEADWOOD)

Pace Project No.: 60163754

Sample: LEADWOOD 001		Lab ID: 60163754001	Collected: 02/25/14 15:46		Received: 02/27/14 08:20		Matrix: Water		
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7							
Cadmium	2.8J	ug/L	5.0	0.56	1	02/27/14 13:15	02/28/14 15:01	7440-43-9	
Lead	2.2J	ug/L	5.0	2.2	1	02/27/14 13:15	02/28/14 15:01	7439-92-1	
Zinc	2050	ug/L	50.0	12.5	1	02/27/14 13:15	02/28/14 15:01	7440-66-6	
2540D Total Suspended Solids		Analytical Method: SM 2540D							
Total Suspended Solids	5.0	mg/L	5.0	5.0	1		03/04/14 07:46		
2540F Total Settleable Solids		Analytical Method: SM 2540F							
Total Settleable Solids	ND	mL/L/hr	0.20	0.20	1		02/27/14 10:00		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Sulfate	279	mg/L	20.0	10.0	20		03/09/14 19:57	14808-79-8	

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ANALYTICAL RESULTS

Project: NPDES MONTHLY (LEADWOOD)

Pace Project No.: 60163754

Sample: LEADWOOD 002		Lab ID: 60163754002		Collected: 02/25/14 16:01		Received: 02/27/14 08:20		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7							
Cadmium	3.9J	ug/L	5.0	0.56	1	02/27/14 13:15	02/28/14 15:04	7440-43-9	
Lead	9.8	ug/L	5.0	2.2	1	02/27/14 13:15	02/28/14 15:04	7439-92-1	
Zinc	5710	ug/L	50.0	12.5	1	02/27/14 13:15	02/28/14 15:04	7440-66-6	
2540D Total Suspended Solids		Analytical Method: SM 2540D							
Total Suspended Solids	ND	mg/L	5.0	5.0	1		03/04/14 07:46		
2540F Total Settleable Solids		Analytical Method: SM 2540F							
Total Settleable Solids	ND	mL/L/hr	0.20	0.20	1		02/27/14 10:00		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Sulfate	431	mg/L	50.0	25.0	50		03/09/14 20:12	14808-79-8	

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ANALYTICAL RESULTS

Project: NPDES MONTHLY (LEADWOOD)

Pace Project No.: 60163754

Sample: LEADWOOD UPSTREAM Lab ID: 60163754003 Collected: 02/25/14 13:17 Received: 02/27/14 08:20 Matrix: Water

Parameters	Results	Units	Report	MDL	DF	Prepared	Analyzed	CAS No.	Qual
			Limit						
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Cadmium	ND	ug/L	5.0	0.56	1	02/27/14 13:15	02/28/14 15:06	7440-43-9	
Calcium	40700	ug/L	100	7.8	1	02/27/14 13:15	02/28/14 15:06	7440-70-2	
Lead	ND	ug/L	5.0	2.2	1	02/27/14 13:15	02/28/14 15:06	7439-92-1	
Magnesium	24200	ug/L	50.0	17.0	1	02/27/14 13:15	02/28/14 15:06	7439-95-4	
Total Hardness by 2340B	201000	ug/L	500		1	02/27/14 13:15	02/28/14 15:06		
Zinc	ND	ug/L	50.0	12.5	1	02/27/14 13:15	02/28/14 15:06	7440-66-6	
200.7 Metals, Dissolved (LF)	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Cadmium, Dissolved	ND	ug/L	5.0	0.56	1	03/05/14 11:45	03/05/14 17:12	7440-43-9	
Lead, Dissolved	ND	ug/L	5.0	2.2	1	03/05/14 11:45	03/05/14 17:12	7439-92-1	
Zinc, Dissolved	24.2J	ug/L	50.0	12.5	1	03/05/14 11:45	03/05/14 17:12	7440-66-6	
2540D Total Suspended Solids	Analytical Method: SM 2540D								
Total Suspended Solids	6.0	mg/L	5.0	5.0	1		03/04/14 07:47		

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ANALYTICAL RESULTS

Project: NPDES MONTHLY (LEADWOOD)

Pace Project No.: 60163754

Sample: LEADWOOD
DOWNSTREAM **Lab ID:** 60163754004 **Collected:** 02/25/14 13:02 **Received:** 02/27/14 08:20 **Matrix:** Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Cadmium	ND	ug/L	5.0	0.56	1	02/27/14 13:15	02/28/14 15:08	7440-43-9	
Calcium	42300	ug/L	100	7.8	1	02/27/14 13:15	02/28/14 15:08	7440-70-2	
Lead	ND	ug/L	5.0	2.2	1	02/27/14 13:15	02/28/14 15:08	7439-92-1	
Magnesium	24800	ug/L	50.0	17.0	1	02/27/14 13:15	02/28/14 15:08	7439-95-4	
Total Hardness by 2340B	208000	ug/L	500		1	02/27/14 13:15	02/28/14 15:08		
Zinc	19.2J	ug/L	50.0	12.5	1	02/27/14 13:15	02/28/14 15:08	7440-66-6	
200.7 Metals, Dissolved (LF) Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Cadmium, Dissolved	ND	ug/L	5.0	0.56	1	03/05/14 11:45	03/05/14 17:15	7440-43-9	
Lead, Dissolved	ND	ug/L	5.0	2.2	1	03/05/14 11:45	03/05/14 17:15	7439-92-1	
Zinc, Dissolved	22.0J	ug/L	50.0	12.5	1	03/05/14 11:45	03/05/14 17:15	7440-66-6	
2540D Total Suspended Solids Analytical Method: SM 2540D									
Total Suspended Solids	8.0	mg/L	5.0	5.0	1		03/04/14 07:47		

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QUALITY CONTROL DATA

Project: NPDES MONTHLY (LEADWOOD)
Pace Project No.: 60163754

QC Batch: MPRP/26284 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60163754001, 60163754002, 60163754003, 60163754004

METHOD BLANK: 1336288 Matrix: Water
Associated Lab Samples: 60163754001, 60163754002, 60163754003, 60163754004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cadmium	ug/L	ND	5.0	02/28/14 14:35	
Calcium	ug/L	21.6J	100	02/28/14 14:35	
Lead	ug/L	ND	5.0	02/28/14 14:35	
Magnesium	ug/L	ND	50.0	02/28/14 14:35	
Total Hardness by 2340B	ug/L	ND	500	02/28/14 14:35	
Zinc	ug/L	ND	50.0	02/28/14 14:35	

LABORATORY CONTROL SAMPLE: 1336289

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cadmium	ug/L	1000	1030	103	85-115	
Calcium	ug/L	10000	10300	103	85-115	
Lead	ug/L	1000	1090	109	85-115	
Magnesium	ug/L	10000	9950	99	85-115	
Total Hardness by 2340B	ug/L		66600			
Zinc	ug/L	1000	1050	105	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1336290 1336291

Parameter	Units	60163611003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Cadmium	ug/L	ND	1000	1000	1050	1050	105	105	70-130	0	10
Calcium	ug/L	317000	10000	10000	331000	330000	141	133	70-130	0	9 M1
Lead	ug/L	ND	1000	1000	1040	1030	103	103	70-130	1	10
Magnesium	ug/L	108000	10000	10000	120000	119000	121	117	70-130	0	9
Total Hardness by 2340B	ug/L	1240 mg/L			1320000	1320000				0	
Zinc	ug/L	ND	1000	1000	1010	1010	99	100	70-130	0	11

MATRIX SPIKE SAMPLE: 1336292

Parameter	Units	60163611004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cadmium	ug/L	ND	1000	1040	104	70-130	
Calcium	ug/L	34200	10000	44200	100	70-130	
Lead	ug/L	ND	1000	1010	101	70-130	
Magnesium	ug/L	145000	10000	158000	123	70-130	
Total Hardness by 2340B	ug/L	684 mg/L		760000			
Zinc	ug/L	ND	1000	1030	101	70-130	

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QUALITY CONTROL DATA

Project: NPDES MONTHLY (LEADWOOD)

Pace Project No.: 60163754

QC Batch: MPRP/26331

Analysis Method: EPA 200.7

QC Batch Method: EPA 200.7

Analysis Description: 200.7 Metals, Dissolved

Associated Lab Samples: 60163754003, 60163754004

METHOD BLANK: 1338958

Matrix: Water

Associated Lab Samples: 60163754003, 60163754004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cadmium, Dissolved	ug/L	ND	5.0	03/05/14 16:59	
Lead, Dissolved	ug/L	ND	5.0	03/05/14 16:59	
Zinc, Dissolved	ug/L	ND	50.0	03/05/14 16:59	

LABORATORY CONTROL SAMPLE: 1338959

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cadmium, Dissolved	ug/L	1000	873	87	85-115	
Lead, Dissolved	ug/L	1000	888	89	85-115	
Zinc, Dissolved	ug/L	1000	872	87	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1338960 1338961

Parameter	Units	60163755001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Cadmium, Dissolved	ug/L	ND	1000	1000	968	907	97	91	70-130	7	10
Lead, Dissolved	ug/L	ND	1000	1000	948	894	95	89	70-130	6	10
Zinc, Dissolved	ug/L	144	1000	1000	1070	1010	93	87	70-130	6	11

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QUALITY CONTROL DATA

Project: NPDES MONTHLY (LEADWOOD)

Pace Project No.: 60163754

QC Batch: WET/46446

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60163754001, 60163754002, 60163754003, 60163754004

METHOD BLANK: 1338179

Matrix: Water

Associated Lab Samples: 60163754001, 60163754002, 60163754003, 60163754004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	03/04/14 07:43	

SAMPLE DUPLICATE: 1338180

Parameter	Units	60163690002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	ND	8.0		10	

SAMPLE DUPLICATE: 1338181

Parameter	Units	60163753002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	6.0	5.0	18	10	D6

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QUALITY CONTROL DATA

Project: NPDES MONTHLY (LEADWOOD)
Pace Project No.: 60163754

QC Batch: WETA/28500 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60163754001, 60163754002

METHOD BLANK: 1340309 Matrix: Water
Associated Lab Samples: 60163754001, 60163754002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.0	03/09/14 12:51	

LABORATORY CONTROL SAMPLE: 1340310

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	4.7	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1340311 1341125

Parameter	Units	60163799021 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	72.2	250	250	306	311	94	96	80-120	2	15	

MATRIX SPIKE SAMPLE: 1341126

Parameter	Units	60163799022 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	ND	250	300	101	80-120	

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QUALIFIERS

Project: NPDES MONTHLY (LEADWOOD)

Pace Project No.: 60163754

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-K Pace Analytical Services - Kansas City

ANALYTE QUALIFIERS

D6 The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: NPDES MONTHLY (LEADWOOD)

Pace Project No.: 60163754

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60163754001	LEADWOOD 001	EPA 200.7	MPRP/26284	EPA 200.7	ICP/20065
60163754002	LEADWOOD 002	EPA 200.7	MPRP/26284	EPA 200.7	ICP/20065
60163754003	LEADWOOD UPSTREAM	EPA 200.7	MPRP/26284	EPA 200.7	ICP/20065
60163754004	LEADWOOD DOWNSTREAM	EPA 200.7	MPRP/26284	EPA 200.7	ICP/20065
60163754003	LEADWOOD UPSTREAM	EPA 200.7	MPRP/26331	EPA 200.7	ICP/20094
60163754004	LEADWOOD DOWNSTREAM	EPA 200.7	MPRP/26331	EPA 200.7	ICP/20094
60163754001	LEADWOOD 001	SM 2540D	WET/46446		
60163754002	LEADWOOD 002	SM 2540D	WET/46446		
60163754003	LEADWOOD UPSTREAM	SM 2540D	WET/46446		
60163754004	LEADWOOD DOWNSTREAM	SM 2540D	WET/46446		
60163754001	LEADWOOD 001	SM 2540F	WET/46377		
60163754002	LEADWOOD 002	SM 2540F	WET/46377		
60163754001	LEADWOOD 001	EPA 300.0	WETA/28500		
60163754002	LEADWOOD 002	EPA 300.0	WETA/28500		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60163754



60163754

Client Name: Doe Run

Courier: Fed Ex ☒ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☐

Tracking #: 7980 3906 3161 Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☐ Other ☒ ZIP

Thermometer Used: T-239 / T-194

Type of Ice: Yes Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 3.6

Date and initials of person examining contents: 2/27/14 BA

Temperature should be above freezing to 6°C

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody filled out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler name & signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time analyses (<72hr):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6. Self sol
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	12.
Sample labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Includes date/time/ID/analyses	Matrix: <u>WT</u>	13.
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Lot # of added preservative
Pace Trip Blank lot # (if purchased):		15.
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.
Project sampled in USDA Regulated Area:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	17. List State:

Client Notification/ Resolution:

Copy COC to Client? Y / N

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____ Per Amy Sanders, cancel Upstream/Downstream sulfate due to insufficient volume. JLC 3/10/14

Project Manager Review: *[Signature]* Date: 2/27/14



CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A

Required Client Information:

Company: The Doe Run Company
Address: PO Box 500
Viburnum, MO 65566
Email To: asanders@doerun.com
Phone: 573-689-4535 Fax: 573-244-8179
Requested Due Date/TAT: 5 - 7 Days

Section B

Required Project Information:

Report To: Amy Sanders
Copy To:
Purchase Order No.:
Project Name: NPDES Monthly (Leadwood)
Project Number:

Section C

Invoice Information:

Attention: Amy Sanders
Company Name: The Doe Run Company
Address: PO Box 500, Viburnum, MO 65566
Pace Quote Reference:
Pace Project Manager: Jamie Church
Pace Profile #:

Page: 1 of 1

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☒ OTHER

Site Location

STATE: MO

Requested Analysis Filtered (Y/N)

ITEM #	Section D Required Client Information	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WATER WT WASTE WATER WW PRODUCT P SOIL/SOLID OL WIP WP AR AR OT OT TS TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives								Analysis Test ↓	Requested Analysis Filtered (Y/N)										Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
					COMPOSITE START		COMPOSITE END/GRAB				Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol	Other		TSS	Settleable Solids	Sulfate	Cd, Pb, Zn - Total	Hardness	Cd, Pb, Zn - Dissolved																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS		
* 200.8 Total Recoverable Metals	Larry Hopkins Doe Run	2/25/14	1600	Benet C/ps 18P31 ¹⁵	2/27/14	0820	3.6	Y	Y
**analyzed within 24 hours with flagged data									

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Larry Hopkins

SIGNATURE of SAMPLER: Larry Hopkins

DATE Signed
(MM/DD/YY):

2/25/14

Temp in °C

Received on
Ice (Y/N)

Custody Sealed
Cooler (Y/N)

Samples Intact
(Y/N)